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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/089,446	12/18/2002	Donald S. Hare	0175-0285P	9413

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EXAMINER

SCHILLING, RICHARD L.

ART UNIT PAPER NUMBER

1752

DATE MAILED: 09/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/089,446

Applicant(s)

HARE ET AL.

Examiner

Richard L. Schilling

Art Unit

1752

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
 Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 August 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) ²³1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) ²³1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

1. Claims 1-23 are rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of European Patent Publication 351,085 or De Vries et al. '591 both further in view of Coleman. The European patent publication (see particularly page 2, lines 21-43; page 3, lines 6-45) and De Vries et al. (see particularly column 2, lines 6-50; column 3, lines 1-26, column 3, lines 44-66; column 5, lines 3-8; column 6, lines 17-40; column 8, lines 58-66; Figure 1) disclose heat transfer elements comprising supports, sublimable dye inks for patterns on the support materials and thermally transferable polymer coatings, including acrylic compositions, over the sublimable dye patterns. The dye patterns are transferred to fabric receptors by laminating the heat transferable polymer layers onto the fabric receptors and applying heat and pressure to transfer the heat transferable polymer layers and sublimable dyes into the fabric receptors. The heat transferable polymer layers soften or melt at the transfer temperatures which are also approximately the same temperatures for dye sublimation. The European patent publication discloses that the sublimable dyes diffuse into the thermally transferable polymer layers during transfer. The "secondary phase transition stage" set forth in the instant claims is explained in the specification as being a softening or melting temperature of the polymer layers. Page 21 of the

specification discloses that any polyester material may be used that melts at 60-270°C. Therefore, the European patent publication and De Vries et al. disclose materials that enter a secondary phase of softening or melting at temperatures approximately the same as a sublimation temperature of the dyes.

The temperature range of dye sublimation in De Vries et al. (column 4, lines 31-38) overlaps the transfer temperature or melting temperatures or softening temperatures of the polymers of De Vries et al. De Vries et al. also discloses that it is desirable that the support materials be impervious to the heat transferable polymer layers or meltable layers which may optionally be on the support materials. De Vries et al. and the European patent publication do not set forth barrier layers on the surface of their supports which do not melt during transfer, i.e. allow for cold release. However, Coleman (see particularly column 4, lines 5-26) discloses heat transfer materials comprising supports, ink designs and heat transferable polymer layers over the ink designs for transfer to receptors wherein it is taught that the supports may be coated with barrier layers to seal the underlying paper supports and allow release of the heat released polymer layers and prevent the heat release layers from penetrating the substrates. In view of the teachings in Coleman of using barrier layers on support materials to improve transfer

of the heat release polymer layers to fabric receptors and prevent imaging material or heat release polymer transfer material from adhering to the supports during transfer, it would be obvious to one skilled in the art to improve the heat release materials of the European patent publication and De Vries et al. by employing barrier layers, such as those in Coleman, on the support materials of the European patent publication and De Vries et al. in order to improve the transfer properties and prevent release material and imaging material from adhering to the supports of the European patent publication and De Vries et al. It would be obvious to one skilled in the art to use these barrier materials in the European patent publication and De Vries et al. because the European patent publication and De Vries et al. desire release from and the non-penetration of imaging materials into their support materials. Applicants' argument that the European patent publication and De Vries et al. do not disclose polyester layers that enter a secondary transition stage when heated at temperatures approximately the same as a dye sublimation temperature is unconvincing. As explained in the rejection above, the polymeric heat transfer layers of the European patent publication and De Vries et al. do contain polymers that soften or melt at temperatures approximately the same as one of their disclosed dye sublimation temperatures.

Also, the purpose of employing meltable or softenable polymers in the European patent publication and De Vries et al. is the same purpose as disclosed in applicants' specification, i.e. adhering to a receptor during heat transfer. The European patent publication (page 3, lines 34-45) allows for dye sublimation transfer into its heat transferable polymer layer and dye fixing at room temperature, i.e. the polymer enters a secondary phase, e.g. softens, at dye sublimation temperatures.

2. Claims 1-22 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention. The rationale of this rejection is set forth in paragraph 4 of the first Office action filed April 7, 2004, incorporated herein by reference. Applicants' argument that the term "polyester" includes a category of polymer whose monomer contains the ester functional group is unconvincing since the term "polyester" is still indefinite in scope. It is indefinite as to whether or not the polyester of the instant claims is intended to include the traditional definition of polyesters as condensation polymers from diols and diacids particularly since the specification fails to mention condensation polyesters. Also, the definition in the encyclopedia supplied by applicants requires the polymer to have

an ester group. As explained in the first Office action, many of the specific polymers disclosed in the specification do not necessarily contain any ester groups. Binders A-G used in the working Examples of the specification are without ester groups. Therefore, the intended scope of the term "polyester" is still indefinite. The "polyesters" disclosed in the specification are polymers derived from vinyl monomers of acrylic acid, acrylate, methacrylate and vinyl acetates as disclosed on page 23, lines 25-28. These polymers include polymers derived from ethylenically unsaturated monomers which may or may not include ester groups.

3. **THIS ACTION IS MADE FINAL.** Applicants are reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a). The practice of automatically extending the shortened statutory period an additional month upon the filing of a timely first response to a final rejection has been discontinued by the Office. See 1021 TMOG 35.

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE

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ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

4. Any inquiry concerning this communication should be directed to Mr. Schilling at telephone number (571) 272-1335.

RLSchilling:cdc

September 7, 2004

RICHARD L. SCHILLING
PRIMARY EXAMINER
GROUP 4100 1752

